REMARKS

The Amendment is in response to the Office Action mailed on Oct. 28, 2011. Claims 1-6 and 8-18 are rejected under 35 U.S.C. 112 first paragraph, as failing to comply with the enablement requirement. Claims 1, 4-6, 8-10 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hennessy et al. ("Computer Organization and Design, herein after "Hennessy"). Claims 2, 3, and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hennessy and further in view of Vaglica (US 5,084,814).

The paragraph from lines 10 to 18 on page 5 and the paragraph starting at line 24 of page 6 to line 2 of page 7 of the substitute specification filed on March 18, 2009 are amended. The amendments to the specification are editorial to clarify some translation inconsistencies. A Verification of Translation for the paragraphs identified above is attached as Appendix A. No new matter was added.

Claim 1 is amended. Support for the amendments may at least be found at lines 20 to 29, page 6 of the substitute specification, which is further amended in this Amendment.

The rejections are traversed. Reconsideration is requested in view of the amendments and the following remarks.

Claim Rejections – 35 USC § 112

Claims 1-6 and 8-18 are rejected under 35 USC 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse the rejection.

Claim 1 recites, in part, "the exiting signal being sent during a pipeline period immediately before a last cycle of an old command exiting the pipeline; (e) after receiving the exiting signal, judging whether there is command relevance between the new command to be inserted and the old command, if yes, then inserting the new command after the old command exits; otherwise, performing a next step..."

Figure 5 shows commands in a six stage pipeline over time. In the initial time point, Command A is shown in stage 1 of the pipeline. In the next time point, Command A moves to stage 2 of the pipeline, and Command B is inserted into stage 1 of the

pipeline. In the following time point, Command C is shown to be inserted to stage 1 of the pipeline, while Command A and B move to stages 3 and 2 of the pipeline respectively. Further, Figure 5 shows that Command A is exiting the pipeline at stage 3 in the pipeline. One of ordinary skill in the art would have understood that due to a possible cycle operation, Command A may be inserted to stage 1 of the pipeline in each of the pipeline period during the cycle operation until its last cycle. This part of the pipeline operation is similar to what is shown in Figure 1.

Figure 5 further shows that a new Command G may be inserted into stage 1 of the pipeline at the initial time point, which is the same stage as Command A at that time point. Therefore, Commands A and G overlap in stage1 of the pipeline. Figure 5 also shows that the overlap of Commands A and G continues until Command A exits the pipeline at stage 3 in the pipeline. Consequentially, stages 4 to 6 only have Command G in the following consecutive time points.

Claim 1 requires an exiting signal to be sent. The accompanying text of Figure 5 in the specification further provides:

> [t]aking Fig. 5 as an example, the new Command G is inserted at No. 1 pipeline stage, thus the pipeline exiting signal indicating that the old Command A is exiting is released at the fifth stage of the pipeline period immediately before the last cycle of the exiting Command A, and when the exiting Command A flows to the sixth stage of the pipeline, a command adding judgment logic determines whether or not to insert the new Command G.

(line 24 page 6 to line 2 page 7 of the substitute specification filed on March 18, 2009, which is replaced by the amended paragraph in this paper.) In view of the text and Figure 5, one of ordinary skill in the art would have understood that Figure 5 shows that Command A is in its last cycle in the pipeline, and an exiting signal indicating that Command A is exiting the pipeline was provided at stage 5 of the pipeline period immediately prior to the pipeline period shown in Figure 5. Further, the specification discloses that in response to the exiting signal, a command adding judgment logic may

decide whether Command G is to be inserted into stage 1 of the current period as shown in Figure 5, which is also the last cycle of Command A. If Command G is inserted into stage 1 of the current period, Command G may overlap with Command A, because Command A is also inserted into Stage 1 of its last cycle at that time point.

Therefore, one of ordinary skill in the art would have understood that even though Command A exits the pipeline at stage 3 of the pipeline period as shown in Figure 5, the exiting signal was sent in the pipeline period that is prior to the period shown in Figure 5. The exiting signal was not sent at stage 3 of the pipeline period shown in Figure 5, as the Office Action alleges. Consequentially, the specification and claims 1 are consistent. Withdrawal of the ejection is respectfully requested.

Claims 2-6 and 8-18 depend on claim 1 ultimately, and therefore are patentable along with claim 1 and need not be separately distinguished at this time. Applicants are not conceding the relevance of the rejection to the remaining features of the rejected claims.

Claim Rejections – 35 USC § 102

Claim 1 requires that "the new command is inserted into the pipeline at a pipeline stage that is the same as the command during the last cycle of the old command…" As shown in Figure 5, in one embodiment, Command G is inserted into stage 1 of the pipeline at the initial time point, which is the same stage as the exiting Command A at that time point.

Hennessy fails to teach or suggest this process as recited in claim 1. Instead, Hennessy merely discusses inserting at least one bubble into a pipeline when there is a conflict between an old instruction and a new instruction (see Hennessy, pages 489-91), and, as a result, bubbles may appear in the pipeline. Therefore, the focus of Hennessy is on inserting bubbles, rather than inserting new commands to remove bubbles. Hennessy is completely silent as to when the old command is in the last cycle of the pipeline, inserting the new command into the pipeline; and the new command is inserted to the pipeline stage that is the same as the old command as recited in claim 1.

For at least these reasons, claim 1 is patentable over Hennessy. Claims 4-6 and 8-9 depend from claim 1 and are patentable along with claim 1 and need not be separately distinguished at this time. Applicants are not conceding the relevance of the rejection to the remaining features of the rejected claims.

Claims 10 and 15-18 depend ultimately from claim 1 and are patentable along with claim 1. In addition, Applicants submit that claims 10 and 15-18 are each independently patentable. The features of claims 10 and 15-18, for example, wherein the command processing unit sends a new command to the same pipeline stage as an old command when an exiting signal of the old command is received, or there is not command relevance between the new command and the old command, and the old command is in the last cycle of the pipeline, are not seen in or suggested by the references of record. Applicants are not conceding the relevance of the rejection to the remaining features of the rejected claims.

Claim Rejections – 35 USC § 103

Claims 2, 3 and 11-14 are rejected under 35 USC 103(a) as being unpatentable over Hennessy, and further in view of US 5084814 to Vaglica. Applicants respectfully traverse this rejection.

Vaglica does not remedy the deficiencies of Hennessy. Claims 2-3 and 11-12 depend ultimately from claim 1 and are patentable over Hennessy in view of Vaglica for at least the same reasons discussed above regarding claims 1, 4-6, 8-10 and 15-18. Applicants are not conceding the relevance of the rejection to the remaining features of the rejected claim.

Likewise, claims 13 and 14 depend ultimately from claim 1 and are patentable over Hennessy in view of Vaglica for at least the same reasons discussed above regarding claims 1, 4-6, 8-10 and 15-18. Vaglica does not remedy the deficiencies of Hennessy. In addition, Applicants submit that claims 13 and 14 are each independently patentable. The features of claims 13 and 14, for example, wherein the command processing unit sends a new command to the same pipeline stage as an old command when an exiting signal of the old command is received, or there is not command relevance between the

new command and the old command, and the old command is in the last cycle of the pipeline, are not seen in or suggested by the references of record. Applicants are not conceding the relevance of the rejection to the remaining features of the rejected claims.

In view of the above, favorable reconsideration in the form of a notice of allowance is respectfully requested. Any questions regarding this communication can be directed to the undersigned attorney, Rong Yang, Limited Recognition No. L0279, at (612) 455-3816.
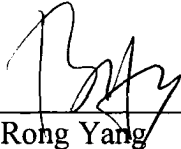
Respectfully submitted,

HAMRE, SCHUMANN, MUELLER &
LARSON, P.C.
P.O. Box 2902-0902
Minneapolis, MN 55402-0902
(612) 455-3800

52835
PATENT TRADEMARK OFFICE

Dated: Jan. 26, 2012

By: _____

Rong Yang
Limited Recognition No. L0279

CY